

## OUTER PLANETS/SOLAR PROBE PROJECT: SOLAR PROBE

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**Solar Probe**, the first mission to the Sun and the third of three missions in NASA's Outer Solar System/Solar Probe Program, is a voyage of exploration, discovery, and comprehension. This **near-Sun flyby** will provide *in situ* measurements in the solar corona and high-resolution pictures and magnetograms of the **photosphere** and **polar atmosphere**. These measurements are also needed as "ground truth" for interpreting the many measurements of the Sun and solar activity that have been made from a distance of 1 AU.

Solar Probe is scheduled for launch in February 2007. It will arrive at the Sun along a polar trajectory perpendicular to the Sun-Earth line with a perihelion of 4 solar radii ( $R_s$ ) from the Sun's center. Two perihelion passages will occur, the first in 2010 (near solar sunspot maximum) and the second in 2015 (near solar minimum) ensuring measurement of both coronal hole and streamer-related solar wind properties. To reach the Sun, probe must first fly to Jupiter and use a gravity assist to lose its angular momentum about the Sun. The imaging and *in situ* miniaturized instruments will provide the first 3-dimensional view of the corona, high spatial- and temporal-resolutions of the magnetic fields, and helioseismic measurements of the polar regions, as well as sporadic high-spatial-resolution local sampling of plasmas and fields at all latitudes.